S4 Home Economics Practice Paper: Meal Energy, Recipe Scaling and Cost, Fabric Cutting, Household Electricity Cost, Food Preservation, Consumer Choice and Home Safety

S4 Home Economics | Time allowed: 90 minutes | Total: 100 marks | 24 questions

A. Meal Energy Calculation (17 marks)

Carbohydrate and protein supply 4 kcal per gram; fat supplies 9 kcal per gram.

1. A meal contains 60 g of carbohydrate, 25 g of protein and 20 g of fat. Find the total energy. (5 marks)

2. For the same meal, find the percentage of energy supplied by fat (one decimal place). (5 marks)

3. If the person needs 2 000 kcal a day, find this meal as a percentage of the daily requirement. (4 marks)

4. State one health benefit of dietary fibre and name one fibre-rich food. (3 marks)

B. Recipe Scaling and Cost (17 marks)

Assume prices are unchanged and there is no waste.

5. A recipe for 4 people needs 250 g of flour. Find the flour needed for 10 people. (5 marks)

6. If flour costs 12 dollars per kilogram, find the cost of the flour in the previous question. (5 marks)

7. A 500 g pack costs 18 dollars and a 1 kg pack costs 32 dollars. Compare the price per 100 g and find the saving per kilogram. (4 marks)

8. Explain why the cost per portion is usually lower when food is made in bulk. (3 marks)

C. Fabric Cutting and Shrinkage (17 marks)

The fabric is 140 cm wide; seam allowances are ignored.

9. Four pieces of 60 cm x 40 cm must be cut. Find the length of fabric needed in cm and the area used in square metres. (5 marks)

10. If the fabric shrinks by 4 %, find its length after washing. (4 marks)

11. The fabric costs 60 dollars per metre. Find the cost of the fabric used. (4 marks)

12. Compare cotton and polyester in absorbency and quick drying, and give one suitable use for each. (4 marks)

D. Household Electricity Use and Cost (16 marks)

Electricity is charged at 1.2 dollars per kWh.

13. A 1 500 W heater runs 2 hours a day. Find the energy used per day and over 30 days, and the monthly cost. (5 marks)

14. Replacing a 60 W bulb with a 9 W LED used 5 hours a day for 30 days saves how much energy and money per month? (5 marks)

15. A family earns 24 000 dollars a month and pays 600 dollars for electricity. Find electricity as a percentage of income. (3 marks)

16. State two practical ways to cut electricity use in the kitchen. (3 marks)

E. Food Preservation and Pickling (17 marks)

Assume bacteria double every 20 minutes.

17. Food is left at room temperature for 3 hours. By what factor does the number of bacteria increase? (5 marks)

18. Two kilograms of vegetables are pickled in 5 % brine. Find the mass of salt needed. (4 marks)

19. A food is produced on 10 March with a 21-day shelf life. Find the expiry date and explain why refrigeration extends shelf life. (4 marks)

20. State three practices that prevent cross-contamination when handling raw meat and ready-to-eat food. (4 marks)

F. Consumer Choice and Home Safety (16 marks)

All prices are in dollars.

21. An item priced at 560 dollars is sold at a 20 % discount. Find the selling price and the amount saved. (5 marks)

22. A person saves 250 dollars a month towards a 3 000 dollar appliance. How many months are needed? (4 marks)

23. A socket in Hong Kong is rated 220 V, 13 A. Find the maximum safe power and state whether two 2 000 W appliances overload it. (4 marks)

24. State two items to check on the label of a pre-packaged food and explain their use. (3 marks)